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(54) CONTROLLER OF SERIES/PARALLEL COMPOSITE ELECTRIC VEHICLE

(57) Abstract:

PURPOSE: To realize the optimum torque distribution corresponding to the difference in efficiency characteristics between a generator and a motor even if the difference exists and improve a power efficiency at the time of the PHV running by a method wherein the torque which is required for the acceleration and/or the deceleration at the time of the PHV running is distributed among the generator and the motor in accordance with the respective characteristics of the generator and the motor.

CONSTITUTION: An engine 10, an AC generator 12 and an AC motor 14 are provided in series with a clutch 16 between the generator 12 and the motor 14 to constitute a composite SPHV. While the clutch 16 is off, an SHV mode and a synchronous mode are made to function and, while the clutch 16 is on, the PHV mode is made to function. The synchronous mode is executed during the transition from the SHV mode to the PHV mode wherein the revolution of the generator 12 is gradually brought close to the revolution of the motor 14. In order to realize the synchronous mode, the field current of the generator 12 is controlled by the switching of an inverter 26. With this constitution, a torque which is required for the acceleration/deceleration at the time of the PHV running is distributed among the generator and the motor in accordance with the respective characteristics of the generator and the motor, so that a power efficiency at the time of PHV running can be improved.